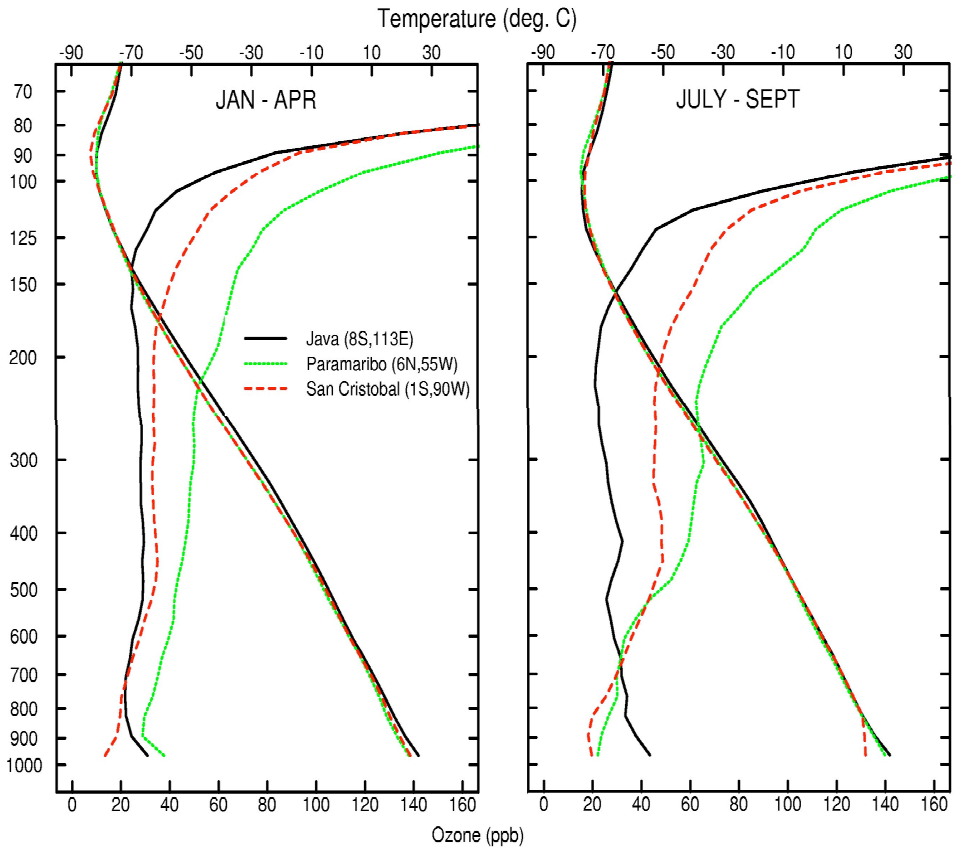


Fig. 1. Mean profiles for ozone and temperature for January to April (left) and July to September (right) for three SHADOZ ozonesonde stations in the inner tropics. The data were averaged into 0.5 km layers in pressure altitude. Note the similarities in the temperature profiles and the differences in the ozone profiles. The data are described in Thompson et al. (2003).

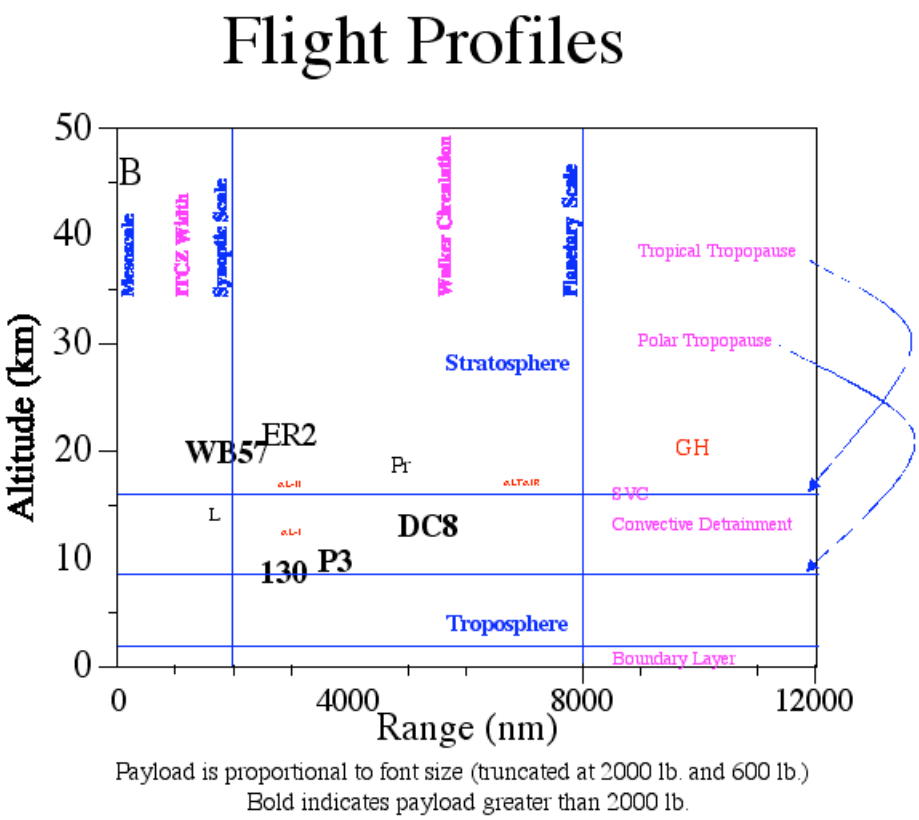
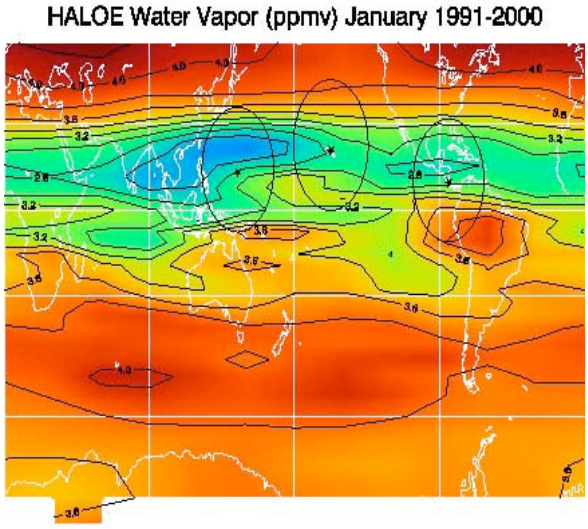


Fig. 2 illustrates the capabilities of the current aircraft fleet to sample the vertical and horizontal spatial scales characterized by various phenomena in the tropics and their payloads. The conventional aircraft in black letters are the ER-2, WB-57, Proteus (P), Lear Jet (L), DC-8, C-130, and P-3. In red are remotely piloted aircraft, the Global Hawk (GH), the altair, the altus (aL-1 and aL-2). B denotes balloons.

Fig. 3 climatological 100 mbar water vapor in Jan. and July



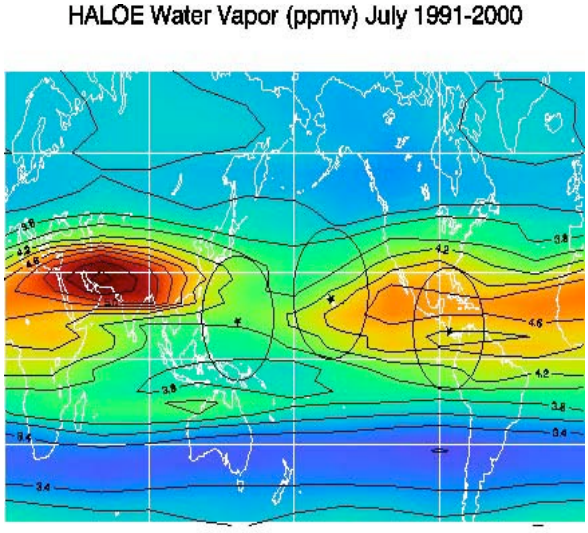
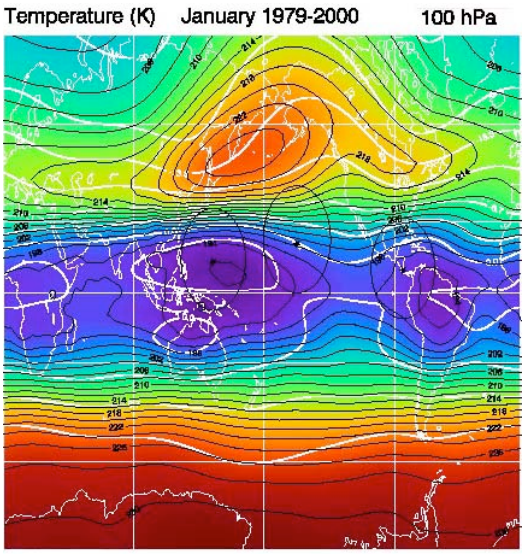


Fig. 4 Climatological 100 mbar Temperature in Jan and July. The coldest Jan temperatures are the over the Tropical Western Pacific, and Brazil. In July cold temperature are more widespread in the tropics.



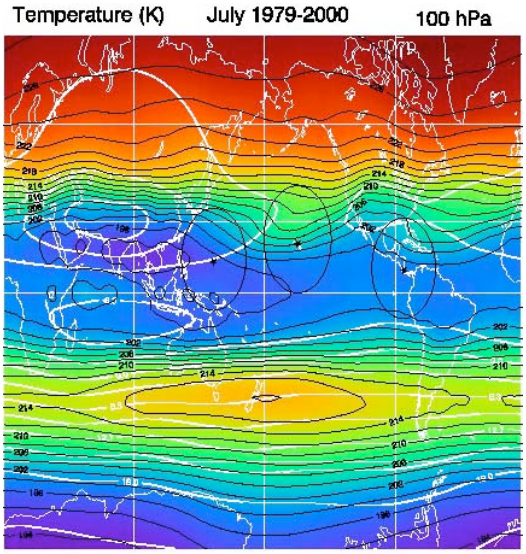
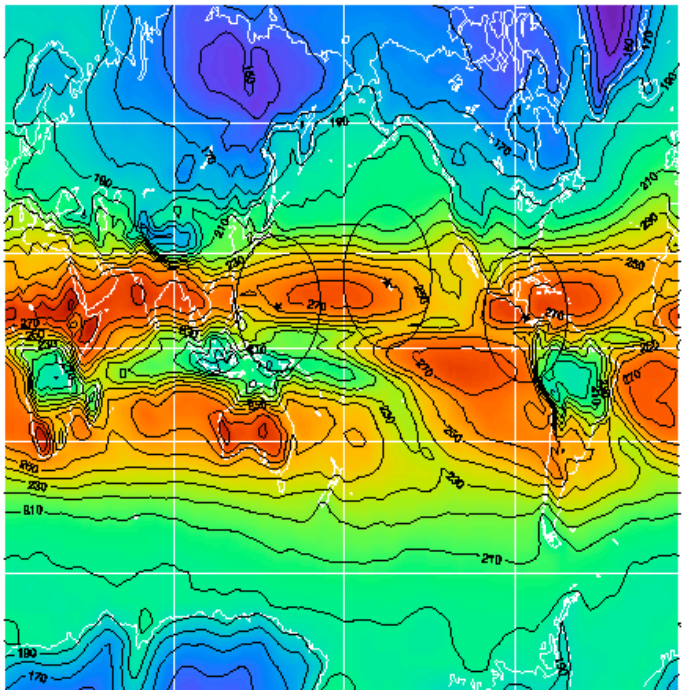


Fig. 5 Climatological outgoing longwave radiation in Jan. and July. In Jan. the lowest OLR values (most high clouds) occur over the Tropical Western Pacific, and South America. In July they are near Coast Rica and India/Southeast Asia..

Outgoing Longwave Radiation (W/m ^ 2) January 1979-1995



Outgoing Longwave Radiation (W/m ^ 2) July 1979-1995

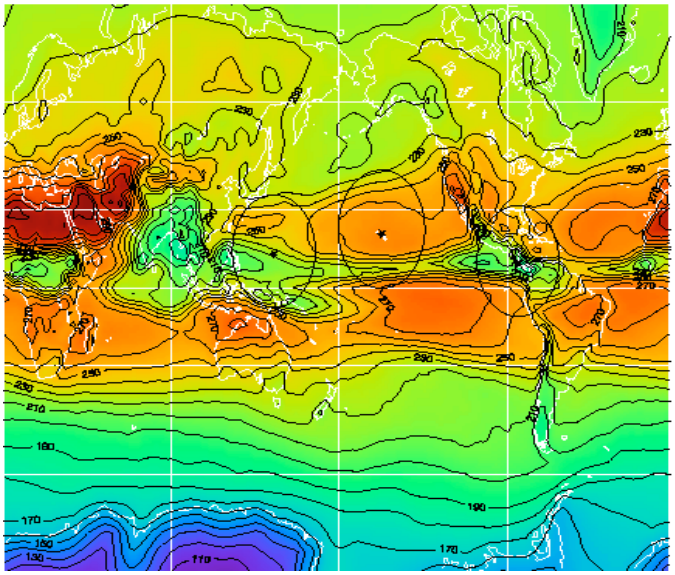


Fig. 6 Lapse-RateTropopause Temperature

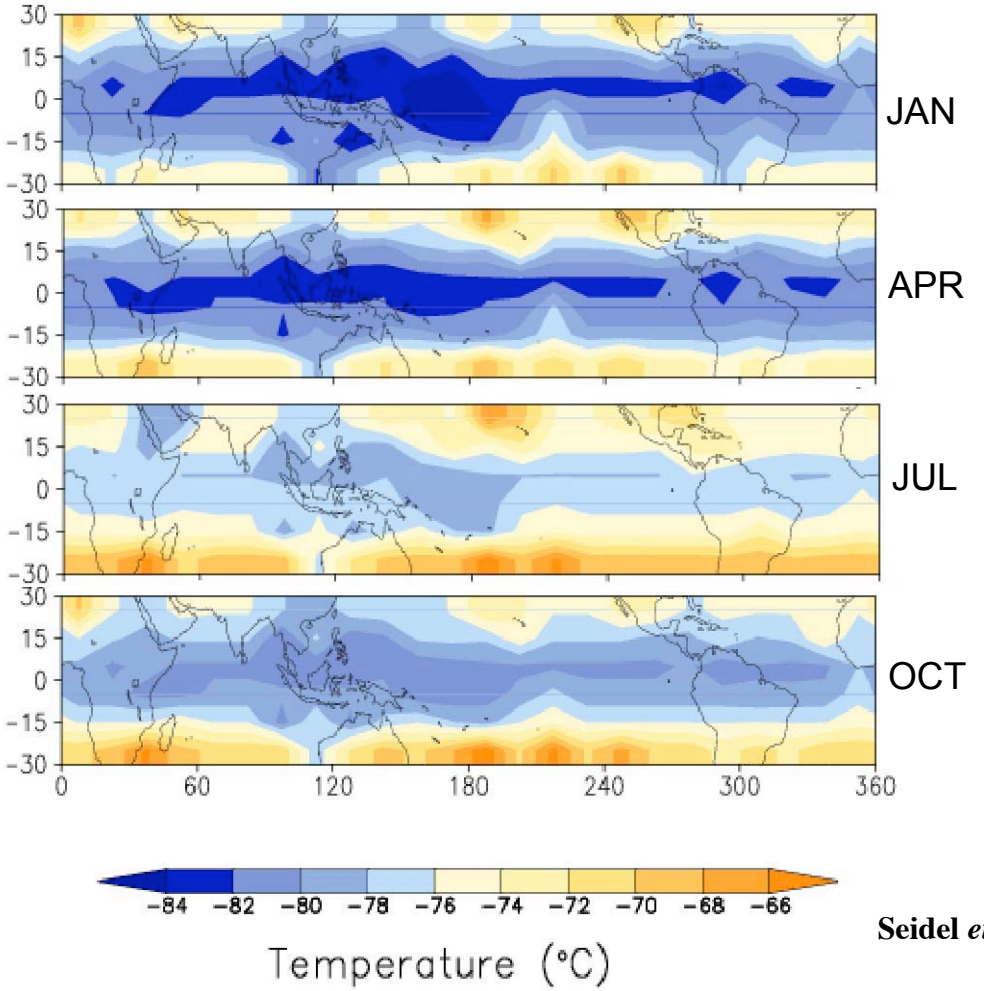


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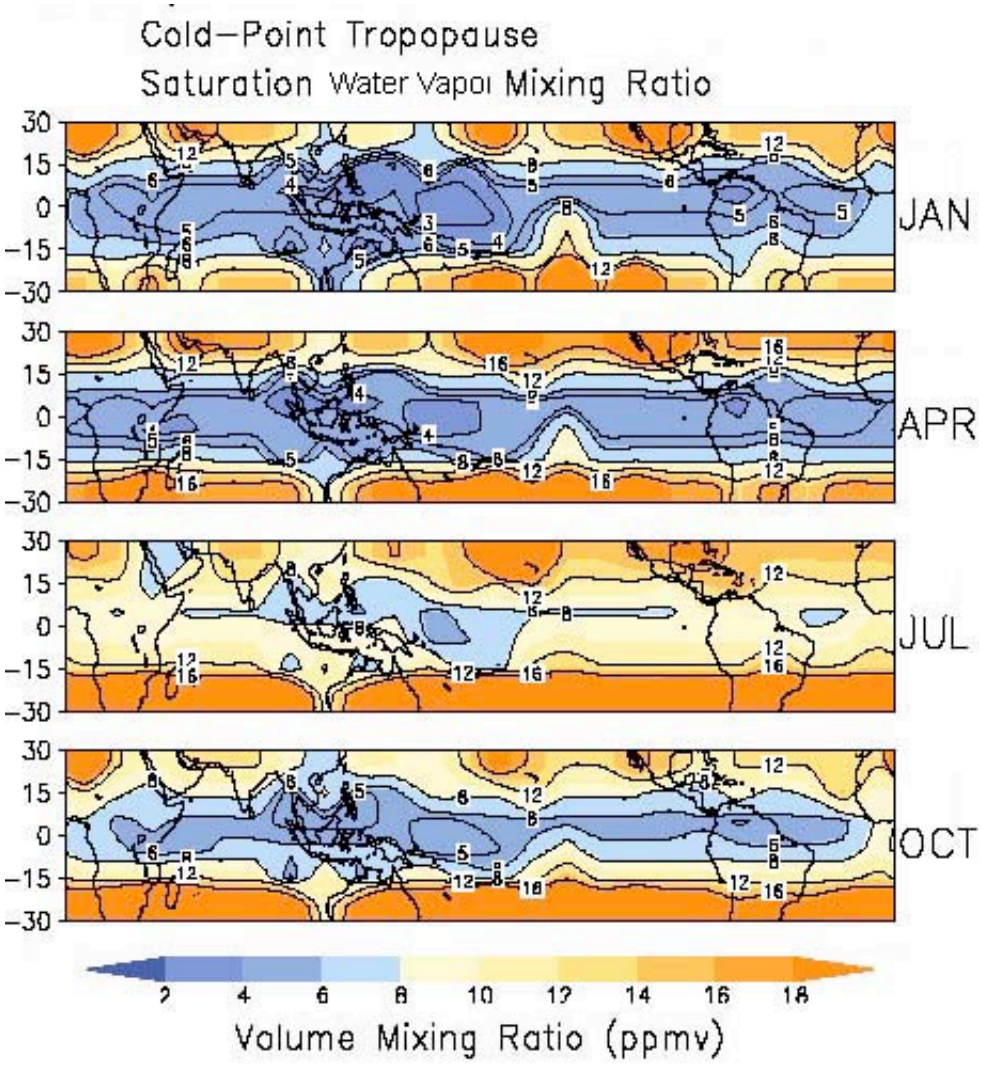
Fig. 7 Saturation water vapor mixing ratio at the cold point tropopause



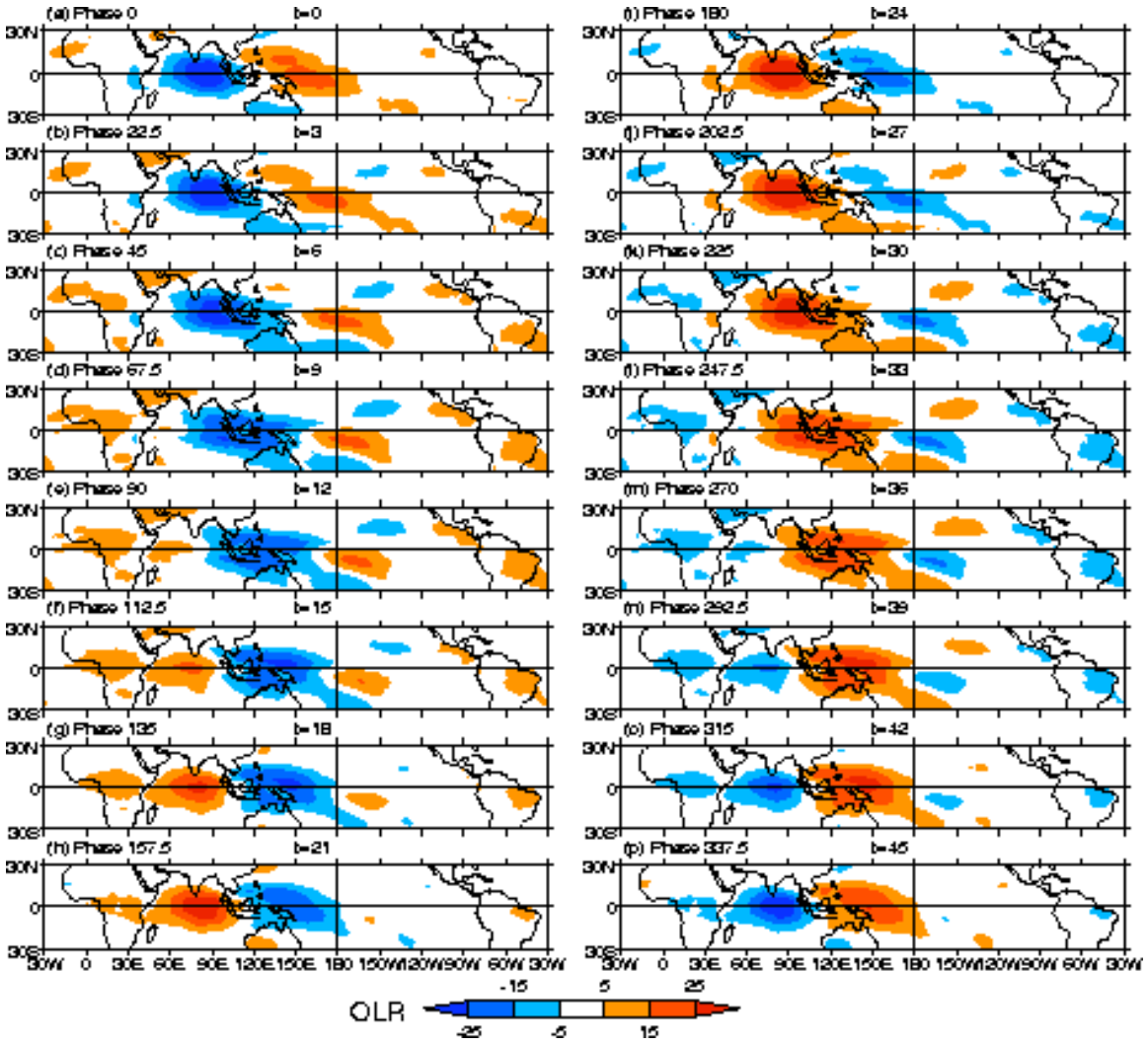


Fig 8 Typical Madden Julian Oscillation life cycle. OLR anomalies (legend is in W m-2). The images are spaced approximately 3 days apart and one whole cycle lasts approximately 48 days. From **Matthews, A.J., 2000** ***Propagation mechanisms for the Madden-Julian oscillation.Quart. J. Roy. Meteor. Soc.,*** **126, 2637-2652.**
http://envam1.env.uea.ac.uk/mjo.html

Fig. A2.1 This figure illustrates the Aura footprints.